

CLAIMS

What is claimed is:

1. A method for automatic end-to-end path provisioning for an optical network

5 by a network management system, comprising:

obtaining path parameters for each network element of the network;

automatically performing discovery of paths including determining
connection possibilities based upon the path parameters; and

10 automatically provisioning an end-to-end STS-n path based on the paths
resulting from the discovery.

2. The method for automatic end-to-end path provisioning according to claim

1, wherein the path parameters includes at least one parameter selected from the group
consisting of bandwidth size, start network element, end network element, add facility,

15 drop facility, link information, cross connection information, equipment information,
facilities information, and scheduled load and availability information.

3. The method for automatic end-to-end path provisioning according to claim

1, wherein the automatic discovery includes building a list of all possible connections for

20 the end-to-end path.

4. The method for automatic end-to-end path provisioning according to claim 1, wherein the automatic provisioning includes selecting a least cost path from the discovered paths and setting the least-cost path as the working path.

5. The method for automatic end-to-end path provisioning according to claim 4, wherein the least cost path is the shortest path based on the number of network element hops.

6. The method for automatic end-to-end path provisioning according to claim 1, wherein the automatic provisioning includes selecting a second least cost path from the discovered paths and setting the second least cost path as the protection path.

7. The method for automatic end-to-end path provisioning according to claim 1, wherein, when the network has UPSR protection scheme, automatically provisioning facility fault protection (FFP) and cross connections.

8. A system for automatic end-to-end path provisioning for an optical network by a network management system, comprising:

an input device for obtaining path parameters for each network element of the network; and

a processor for automatically performing discovery of paths including determine connection possibilities based upon the path parameters and for automatically provisioning an end-to-end STS-n path based on the paths resulting from the discovery.

9. The system for automatic end-to-end path provisioning according to claim 8, wherein the path parameters includes at least one parameter selected from the group consisting of bandwidth size, start network element, end network element, add facility, drop facility, link information, cross connection information, equipment information, facilities information, and scheduled load and availability information.

10. The system for automatic end-to-end path provisioning according to claim 8, wherein the processor automatic discovery includes building a list of all possible connections for the end-to-end path.

11. The system for automatic end-to-end path provisioning according to claim 8, wherein the processor performs automatically discovery by selecting a least cost path from the discovered paths and setting the least-cost path as the working path.

12. The system for automatic end-to-end path provisioning according to claim 11, wherein the least cost path is the shortest path based on the number of network element hops.

13. The system for automatic end-to-end path provisioning according to claim 8, wherein the processor performs automatic provisioning by selecting a second least cost path from the discovered paths and setting the second least cost path as the protection path.

